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Pulsator jig

SIEBTECHNIK TEMA

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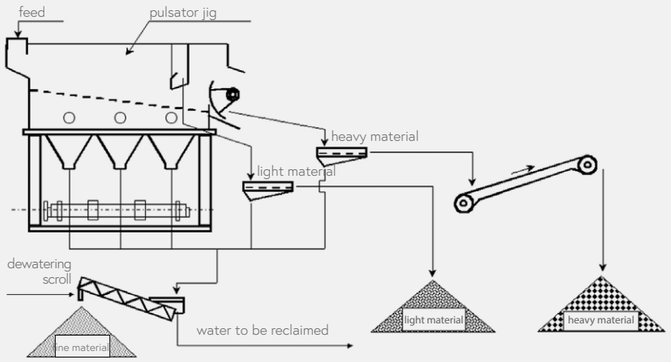
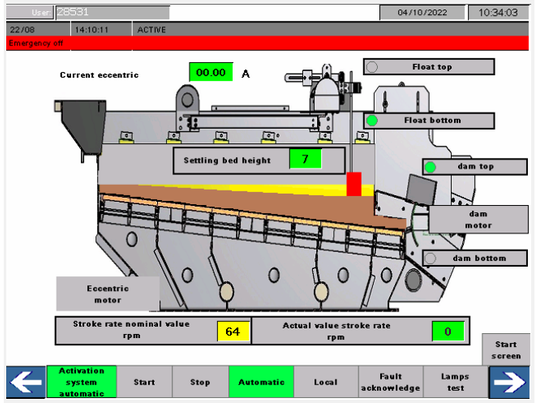
Application

Form a successful seperation according to density, especially if there is only a slight difference in density, it is often not sufficient simply to whirl the material around in a counterflow. It is necessary to provide a vertically pulsating flow through the material bed that allows the material to stratify.
The SIEBTECHNIK pulsator jigs were designed for separating light and heavy components from primary and secondary feed materials according to density, e.g. contaminants from sand and gravel, slag, demolition debris, contaminated soils or for ore pre-dressing.



Typical process flowchart

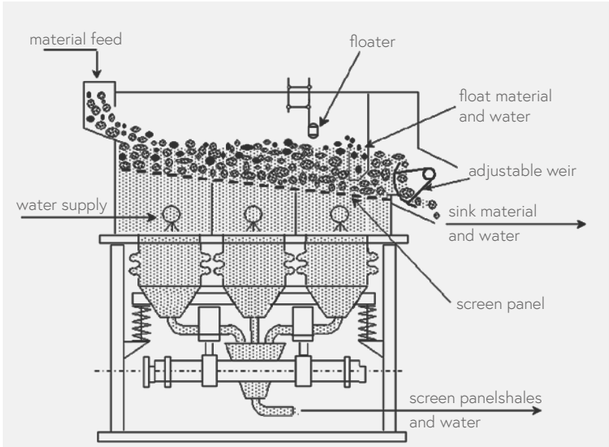


HMI mask of the control

Technique

The main component of the SIEBTECHNIK pulsator jig is a base frame of steel with the assembled jig-box on top of it. The jig-box is equipped with a screen panel made of polyurethane with steel reinforcements. This panel is easily exchangeable. The jig-box is flexibly connected to the oscillating water box via rubber compensators.
Via connecting rods, the water box is connected to the eccentric drive, situated beneath it. The eccentric drive optionally allows an adjustment of stroke height and stroke frequency.
The fine shale material is removed through a collecting flute situated underneath the water box. At the end of the screen panel there is a vertically adjustable discharge chute for the light material and a weir operating as a discharge device for the heavy material. This passive discharge system is advantageous with respect to wear and tear as there is no need for its permanent movement in the abrasive material. The controlling of the weir is based on an automatic floater switch.

PULSATOR JIG SK



Operating principle of a pulsating jig

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Function

The filled water box is put into harmonical oscillations by the eccentric drive. The water pulsates according to the rhythm of these oscillations, thereby providing the stroke necessary for stratification.
The feed material moves towards the overflow outlet, forced forward by the inclination of the screen panel, the stroke and the flow of water. The main effect of the stroke is the stratification of the feed material according to density.
At the end of the screen panel the light material (e.g. carbonized wood, shells), which is stratified near the water surface, is directed to the discharge chute crossing the direction of the water flow.
The heavy material (e.g. quartz, gravel, etc.) is discharged through the automatically controlled adjustable weir.
The separated materials are dewatered on suitable machinery, for example vibration troughs.

Technical Data

Pulsator jig		SK 8	SK 16	SK 24
width of jigging bed	mm	800	1.600	2.400
length of jigging bed	mm	2.500	2.500	2.500
surface of jigging bed	m^2	2	4	6
other length available on request				
capacity* (gravel)	t/h	max. 50	max. 120	max. 180
feed grain	mm	2 to 32, max. 60 (weight percantage 0 - 2 mm, max 20%)		
water needed	m^3	to approx. 150	to approx. 250	to approx. 400
motor power	kW	11	15	22
stroke height	mm	for all machine sizes adjustable to 120		
stroke frequency	min^{-1}	for all machine sizes adjustable to 100		
weight without material	kg	approx. 5000	approx. 9000	approx. 12000

* The capacity depends on grain structure, grain size, difference in density between light material and heavy material, light material content and even spreading of the material along the whole width of the jigging bed. The use of an adjustable conveyor trough is recommended.